1. A MIMO-based multiuser OFDM multiband of UWB base station communication transmitter comprising:

a multiuser encoding and spreading unit;

a polyphase-based multiband;

an IFFT unit;

a filtering and spreading unit;

a MIMO-based multiband modulation and multicarrier RF unit; and

a multiple antenna unit.

2. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 1 wherein said polyphase-based multiband includes a RAM memory bank with a length size of N for storing serial input data and P RAM memory banks with a length size of N/P for storing parallel output data.

3. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 2 wherein polyphase-based multiband may produce P parallel data sequences with a data rate of N/P from a serial data sequence with a data rate of N.

4. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 1 wherein said filtering and spreading unit comprises a dual-switch,

a multiband spreading, two XOR, two transmitter shaped filters, two D/A converters, and two analog reconstruction filters.

5. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 4 wherein said multiband spreading produces an orthogonal sequence for each of multi-frequency bands.

6. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 5 wherein signals of multi-frequency bands are orthogonal each other.

7. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 1 wherein said MIMO-based multiband modulation and multicarrier RF unit includes eleven multiband modulations, eleven additions, and eleven analog bandpass filters.

8. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 7 wherein the eleven multiband modulations equivalently contain one of the modulations including BPSK, QPSK or 16-QAM.

9. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 1 wherein

said multiple antenna unit may either enhance UWB signals quality or increase UWB transmitting distance.

10. The MIMO-based multiuser OFDM multiband of UWB base station communication transmitter of claim 1 wherein said multiple antenna unit includes eleven independent antennas.

11. A MIMO-based multiuser OFDM multiband of UWB mobile communication receiver comprising:

an antenna unit;

a two-antenna based multiband RF receiver unit;

a combination section of an A/D unit, and a digital receiver filter unit, and multiband-despreading unit;

a TEQ, FFT and FEQ section;

a polyphase-based demultiband; and

a despreading, deinterleaver and decoding section.

12. The MIMO-based multiuser OFDM multiband of UWB mobile communication receiver of claim 11 wherein said antenna unit contains two independent and identical antennas.

13. The MIMO-based multiuser OFDM multiband of UWB mobile communication receiver of claim 11 wherein said two-antenna based multiband RF receiver unit includes two LNA, two AGC, two analog bandpass filters, an addition, eleven multiband down converters and demodulations.

14. The MIMO-based multiuser OFDM multiband of UWB mobile communication receiver of claim 11 wherein said the multiband despreading produces a unique and orthogonal despreading sequence for each of the multi-frequency bands.

15. The MIMO-based multiuser OFDM multiband of UWB mobile communication receiver of claim 11 wherein said polyphase-based demultiband includes a RAM memory bank with a length size of N, and P parallel RAM memory banks with a length size of N/P.

16. The MIMO-based multiuser OFDM multiband of UWB mobile communication receiver of claim 15 wherein said polyphase-based demultiband produces a serial output sequence with a data rate of N from P parallel input sequences with a data rate of N/P.

17. A MIMO-based multiuser OFDM multiband of UWB communication system comprises a MIMO-based multiuser OFDM multiband of UWB base station communication transmitter and

receiver, and N users of the MIMO-based OFDM multiband of UWB mobile communication transmitters and receivers;

18. The MIMO-based multiuser OFDM multiband of UWB communication system of claim 17 wherein said the MIMO-based multiuser OFDM multiband of UWB base station communication transmitter and receiver has eleven independent and identical antennas for eleven multi-frequency bands with a programmable use.

19. The MIMO-based multiuser OFDM multiband of UWB communication system of claim 18 wherein the fourth and/or fifth antenna may be turned off avoiding a interference with WLAN 802.11a devices.

20. The MIMO-based multiuser OFDM multiband of UWB communication system of claim 17 wherein said each of the MIMO-based OFDM multiband of UWB mobile communication transmitters and receivers employs two independent and identical antennas.